UNC Asheville Writing Center
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Considerations for writing lab reports:

Lab report templates differs by field and professor expectations ("Happy families are all alike, every unhappy family is unhappy in its own way...").

Most professors provide rubrics delineating which components to include.

- Review grading rubric
- Ask for provided sample papers

Basic components (general outline of a basic lab report)

Introduction

- Introduce the subject. What is the purpose and/or motivation for this experiment?
- How does this objective relate to relevant trends within the area of study?
- Broad to narrow scope > use the inverted triangle method
- Always contains the hypothesis. Independent and dependent variables defined.

Example topic: What is a tardigrade? How do they interact with their environment? What would happen if we shot them into space?!

Methods/procedure

- Possible to cite the lab manual or lecture notes if you find it difficult to restate the procedure in a novel manner
- Provide enough detail so that another scientist could repeat the experiment
- Sometimes won't need to explain how certain instrumentation works (student should know is considered common knowledge)

Results

- Interpreted data, don't include raw numbers
- Student may need help using MS Excel to analyze data

    - Often include figures, graphs, tables in this section.
    - Important to label descriptively and reference in the text
    - Without going into depth, ask students if they know how/need to use **statistical analysis**

        - Report inferential statistics in a specific format.
        - Example sentence on P. 68 of "Writing Papers... "Analysis of variance showed significant variation among females with respect to mean egg mass ($F[29.174]=25.4$, $P<0.001$)."

Discussion

- Analytica/critical interpretation of the results.
- Include sources of errors, assumptions, and/or improvements to experimental design
- Address questions/concerns raised by completing the experiment

Conclusion (sometimes combined with Summary)

- Structure mimics the introduction
- What are the broader implications of this experiment?
- Future directions? Next steps?
- Heading title for this section may vary. Sometimes the report will end with the Discussion and omit the Conclusion.

References

- Citation style will also vary depending on the field/professor
- Styles are often derived from top journals in the field (e.g. Journal of Biochemistry). Perform an internet search to determine the journal layout or

check expectations of the professor.

Web resources:

- Web of science
- Science direct
- Agricola
- UNC Chapel Hill's Writing Center website: http://writingcenter.unc.edu/resources/handouts-demos/specific-writing-assignments/scientific-reports/?searchterm=science%20report

Handbook:

- Writing Papers in the Biological Sciences (McMillan)

Style:

- Tense should match within the section
- Emphasize concision and precision
- Passive voice is acceptable to use in the methods section (stay consistent)